

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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TITLE : MESO-POROUS TiO<sub>2</sub> THIN MEMBRANE HAVING THREE-DIMENSIONAL  
STRUCTURE AND METHOD FOR PRODUCING THE SAME

ABSTRACT : PROBLEM TO BE SOLVED: To provide a meso-porous TiO<sub>2</sub> thin membrane having a  
three- dimensional structure, and a method for producing the same.

SOLUTION: This meso-porous TiO<sub>2</sub> thin membrane having regularly aligned  
three-dimensional structure formed by the removal of a block copolymer is obtained by  
dropping a sol solution consisting of tetraalkoxytitanium, the block copolymer of ethylene  
oxide-propylene oxide-ethylene oxide, a stabilizer and a solvent on a base substrate,  
rotating the base substrate at a high speed for forming an organic/inorganic composite  
TiO<sub>2</sub> thin membrane having a regularly aligned three-dimensional structure and formed on  
the base substrate by vaporizing the solvent and gelling, and then sintering at a high  
temperature.

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